

# Telex<sup>®</sup>

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## User's Manual



**MagnaByte<sup>®</sup> P170/P170v  
Desktop LCD  
Projector**

## **Warranty**

Telex warrants that the MagnaByte® P170/P170v will provide a 99.995% usable active pixel ratio. This means that out of the total 921,600 pixels, the MagnaByte® P170/P170v may contain a maximum of 50 inactive pixels.

Inactive pixels may appear illuminated on the display, however, they will not affect picture quality or the life expectancy of the unit. If you have any questions on this matter, please feel free to contact Telex Communications, Inc.

## **FCC Statement**

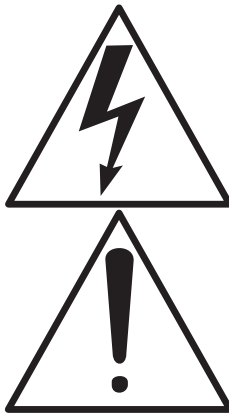
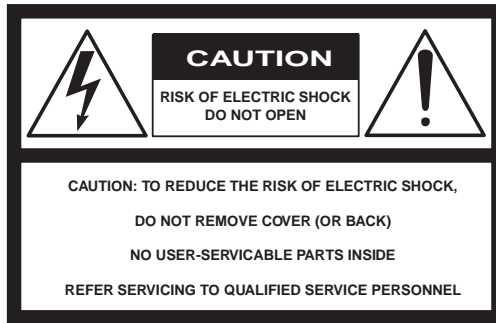
This equipment generates, uses, and can radiate radio frequency energy that may cause interference to radio communications if not installed and used in accordance with this manual. The equipment has been tested and found to comply with the limits for a Class A computing device pursuant to Subpart J, Part 15 of FCC Rules which are designed to provide reasonable protection against such interference when operated in a commercial environment. Operation of this equipment in a residential area may cause interference which the user (at their own expense) will be required to correct.

## **Canadian Department of Communications Statement**

This digital apparatus does not exceed the Class A limits for radio noise emissions from digital apparatus as set out in the Radio Interference Regulations of the Canadian Department of Communications.

Le présent appareil numérique émet pas de bruits radioélectriques dépassant les limites applicables aux appareils numériques de la classe A prescrites dans le Règlement sur le brouillage radioélectrique édicté par le Ministère des Communications du Canada.

MagnaByte® is a trademark of Telex Communications, Inc.,  
Minneapolis, Minnesota 55420



The lightning flash with arrowhead symbol, within an equilateral triangle, is intended to alert the user to the presence of uninsulated “dangerous voltage” within the product’s enclosure that may be of sufficient magnitude to constitute a risk if electric shock.

The exclamation point within an equilateral triangle, is intended to alert the user to the presence of important operating and maintenance (servicing) instructions in the literature accompanying the product.

## IMPORTANT SAFETY INSTRUCTIONS

1. Read Instructions - All the safety and operating instructions should be read before the product is operated.
2. Retain Instructions - The safety and operating instructions should be retained for future reference.
3. Heed Warnings - All warnings on the product and in the operating instructions should be adhered to.
4. Follow Instructions - All operating and use instructions should be followed.
5. Cleaning - Unplug the product from the wall outlet before cleaning any exterior surface. Follow the cleaning instructions in this manual.
6. Water and Moisture - Do not use this product near water -for example, near a bathtub, washbowl, kitchen sink, laundry tub, in a wet basement, or near a swimming pool, etc.

7. Ventilation - Slots and openings in the cabinet are provided for ventilation and to ensure reliable operation of the product and to prevent it from overheating. These slots and openings must not be blocked or covered in any manner.
8. Power Cord Protection - Power supply cords should be routed so that they are not likely to be walked on or pinched by items placed upon or against them, paying particular attention to cords at wall outlets, convenience receptacles, and the point where they exit from the product.
9. Lightning - For added protection for this product during a lightning storm, or when it is left unattended and unused for long periods of time, unplug it from the wall outlet. This will prevent damage to the product due to lightning and power-line surges.
10. Overloading - Do not overload wall outlets, extension cords, or integral convenience receptacles as this can result in a risk of fire or electric shock.
11. Object and Liquid Entry - Care should be taken so that objects do not fall and liquids are not spilled onto the product as they may touch dangerous voltage points or short-out parts that could result in a fire or electric shock.
12. Servicing - Do not attempt to service the product beyond that described in the operating instructions as opening or removing covers may expose you to dangerous voltage. All other servicing should be referred to qualified service personnel.
13. Damage Requiring Service - Unplug this product from the wall outlet and refer servicing to qualified service personnel when:
  - A. The power supply cord or the plug has been damaged.
  - B. Objects have fallen, or liquid has been spilled into the product.
  - C. The product has been exposed to rain or water.
  - D. The product does not appear to operate normally or exhibits a marked change in performance.
  - E. The product has been dropped, or the enclosure damaged.
14. Replacement Parts - When replacement parts are required, be sure the technician has used replacement parts that have the same characteristics as the original parts. Unauthorized substitutions may result in fire, electric shock, or other hazards.

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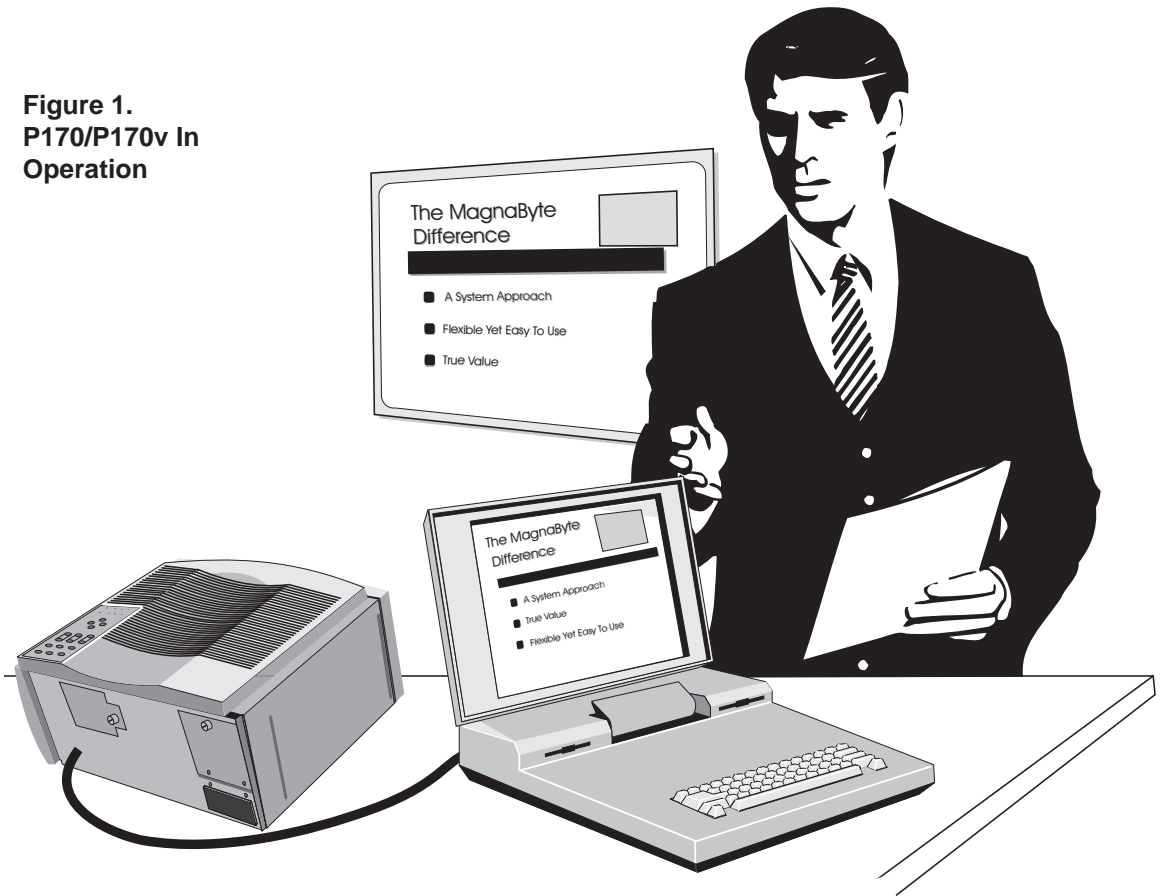
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# GENERAL FEATURES

The MagnaByte® Model P170/P170v is a full-color desktop LCD projection system that is used to display a computerized multi-media presentation. The built-in amplifier/speakers lets you connect to a wireless microphone, portable CD player, or to the auxiliary output of a stereo system. The P170v allows you to connect to the output of VCRs or LaserDisc players.

The P170/P170v is equipped with a monitor interface connector. This allows you to simultaneously view your computer video on both the small and large screens. Figure 1 shows the P170/P170v in use to project computer-generated images onto a large screen.

**Figure 1.**  
**P170/P170v In**  
**Operation**



The MagnaByte® P170/P170v can be connected to any IBM or IBM compatible computer equipped with a VGA video output. The P170/P170v can also be connected to any Apple Macintosh computer that is equipped with a standard Macintosh video output.

The MagnaByte® P170/P170v uses advanced thin-film-transistor liquid crystal display (TFT LCD) technology and is capable of displaying up to 16,194,277 colors. The fast response time of the P170/P170v's TFT LCD provides you with the ability to display sharp, clear, fast-moving images.

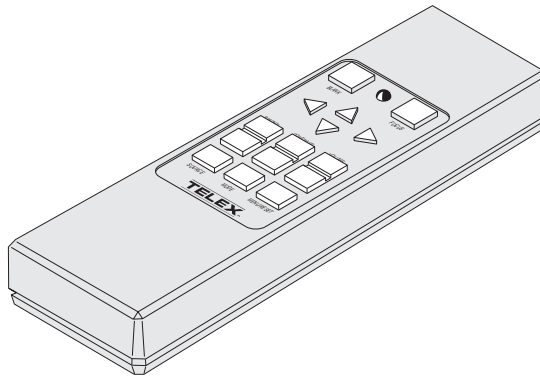
The liquid crystal display is a matrix of 921,600 pixels arranged in 480 rows and 640 columns. Each pixel is a single thin-film-transistor that actively controls the brightness of the light that passes through the pixel.

To protect the P170/P170v from excessive heat, it is equipped with a fan that is turned on whenever the desktop LCD projector is turned on.

The keypanel and on-screen controls allow you to change the video source, color, tint, focus, position, volume, tone, etc. of the projected color image.

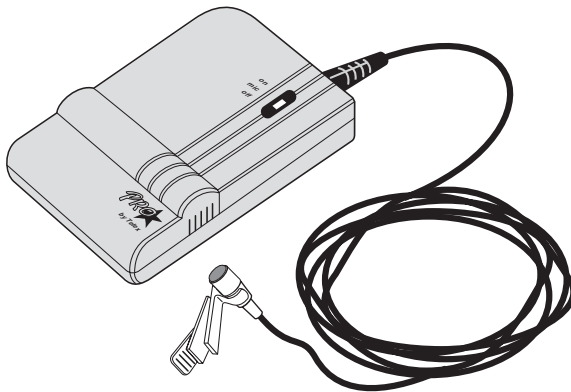
## ACCESSORIES

The accessories shown below are available for use with the MagnaByte® P170/P170v desktop LCD projector:



RC-7 Remote Control  
Catalog 47436-029

The RC-7 is specifically designed for use with the MagnaByte® P170/P170v. It allows remote control of all the P170/P170v keypad and on-screen functions. (The RC-7 comes with the basic P170/P179v.)



B-10 Lapel Microphone with Transmitter  
Catalog 70889-xxx

The B-10 features a permanently attached omni-directional lapel microphone. The unique microphone cable doubles as an efficient antenna, and the transmitter can be clipped to your belt or placed in your pocket. The B-10 can be configured for use with either the PAS-1 or ENG-1 Telex receiver.



# UNPACKING THE P170/P170v

Unpack the MagnaByte® P170/P170v desktop LCD projector and check the package contents. Refer to Figure 2 and the following list for items that are included in the P170/P170v:

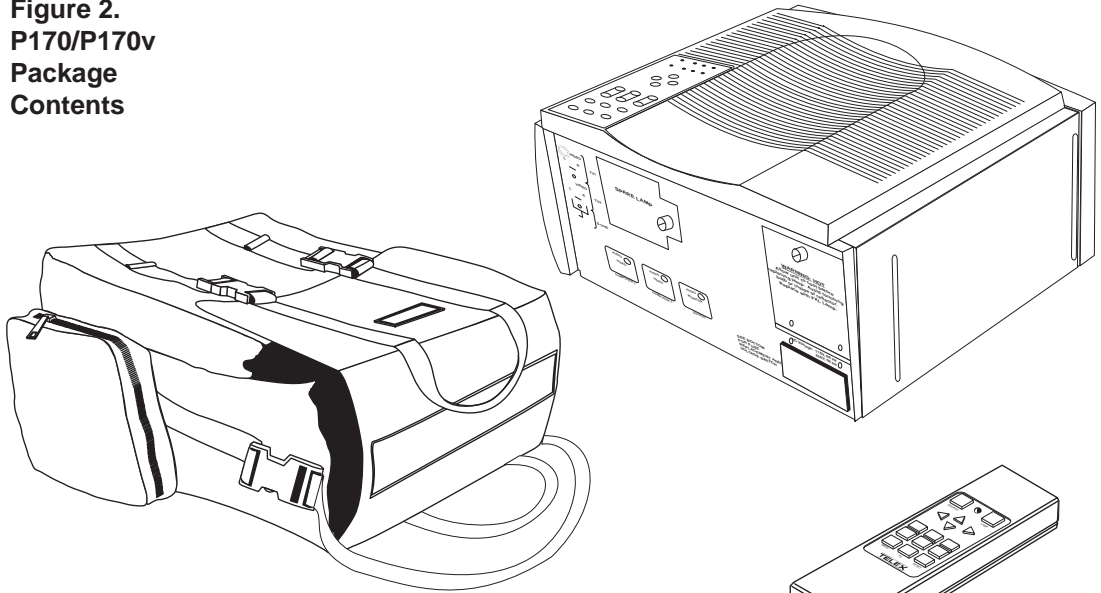
- P170/P170v desktop LCD projector, with appropriate labels
- User's manual
- Quick reference guide
- VGA video cable
- Macintosh computer adapter
- Macintosh monitor adapter
- Audio cable (1/8" stereo phone to 1/8" stereo phone)
- Audio cable (dual RCA to 1/8" stereo phone adapter)
- Composite video and audio cable (triple RCA to RCA) (P170v model only)
- RC-7 Remote control
- Power cord (110V units only)
- Registration card
- Soft-sided case
- Warranty card

Contact your dealer if anything is missing or damaged.

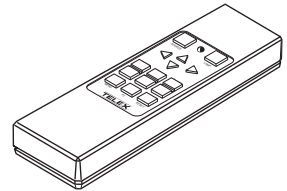


**NOTE:** The 55093-002 and 550093-003 adapters are for use with Macintosh multi-scan monitors. (Telex part numbers 55093-000 and 550093-001 are for use with non-multi scan Macintosh monitors.)

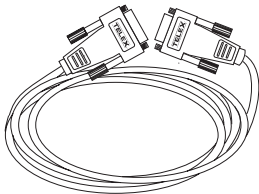
**Figure 2.**  
**P170/P170v**  
**Package**  
**Contents**



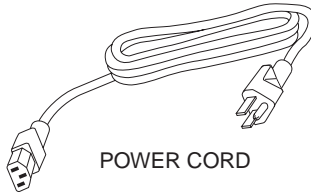
SOFTCASE



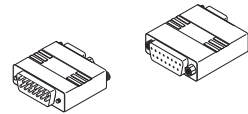
RC-7 REMOTE



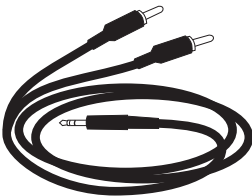
VGA VIDEO CABLE



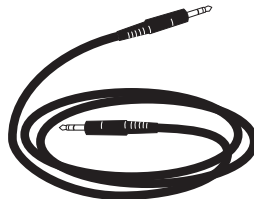
POWER CORD



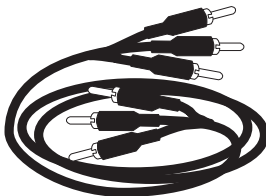
ADAPTERS  
(Used on Macintosh units only)



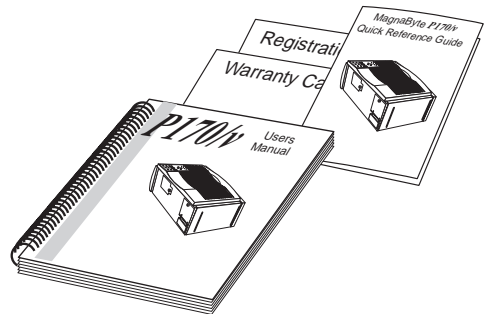
AUDIO CABLE  
(dual RCA to 1/8" stereo)



AUDIO CABLE  
(1/8" stereo to 1/8" stereo)



COMPOSITE VIDEO & AUDIO CABLE  
(Triple RCA to RCA)

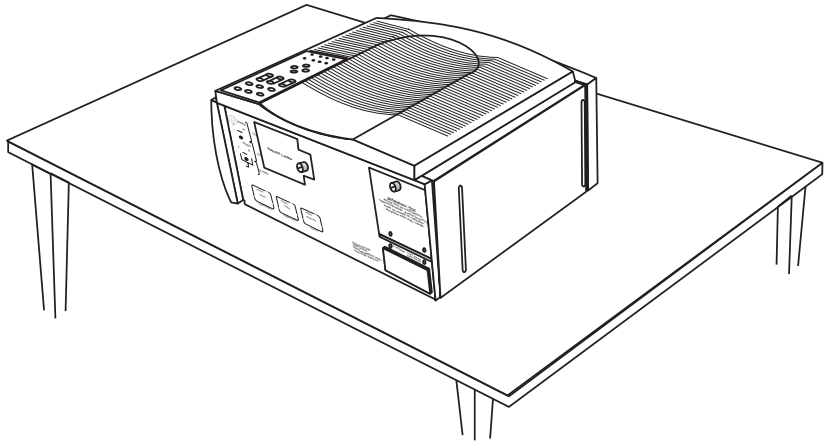


## QUICK SETUP

If you feel very comfortable with the installation of personal computer hardware, you may want to use this section to help you quickly set up your P170/P170v.

1. To ensure adequate cooling, place the P170/P170v on a hard, flat surface, such as a table or desktop as shown below.

**Figure 3.**  
**P170/P170v**  
**Position on a**  
**Desktop**

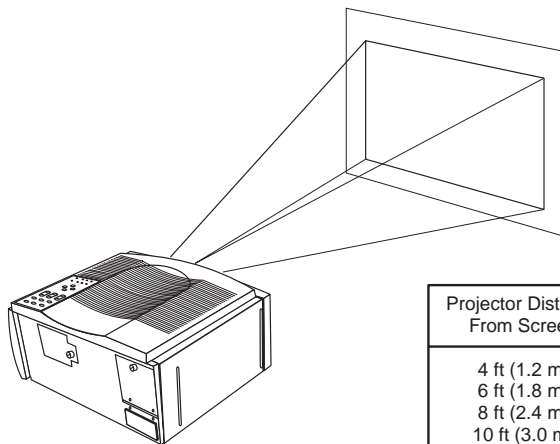


**CAUTION!** To prevent overheating, do not block the P170/P170v fan intake and exhaust vents.



**NOTE:** Use Figure 4 to determine the projector position for the desired screen image size.

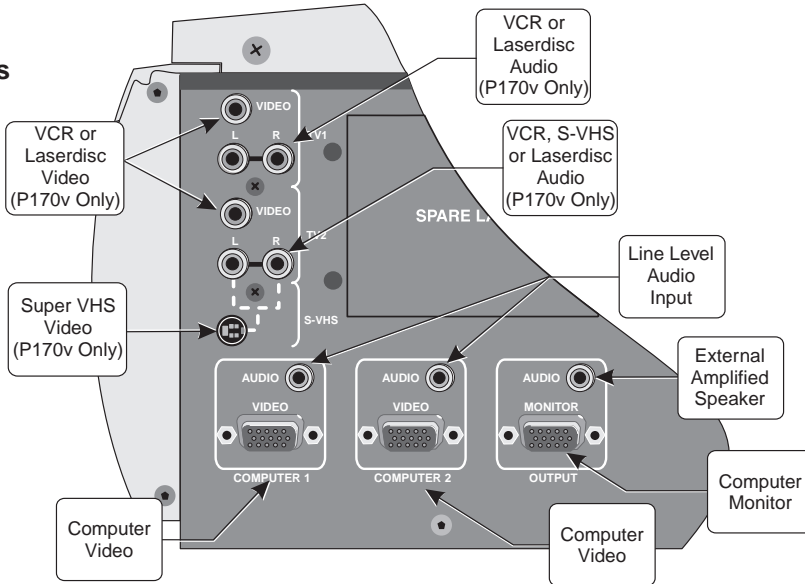
**Figure 4.**  
**Distance vs Image**



Projector Distance From Screen	Image Height	Image Width
4 ft (1.2 m)	2.1 ft (0.6 m)	2.8 ft (0.9 m)
6 ft (1.8 m)	3.2 ft (1.0 m)	4.2 ft (1.3 m)
8 ft (2.4 m)	4.25 ft (1.3 m)	5.6 ft (1.7 m)
10 ft (3.0 m)	5.3 ft (1.6 m)	7.0 ft (2.1 m)

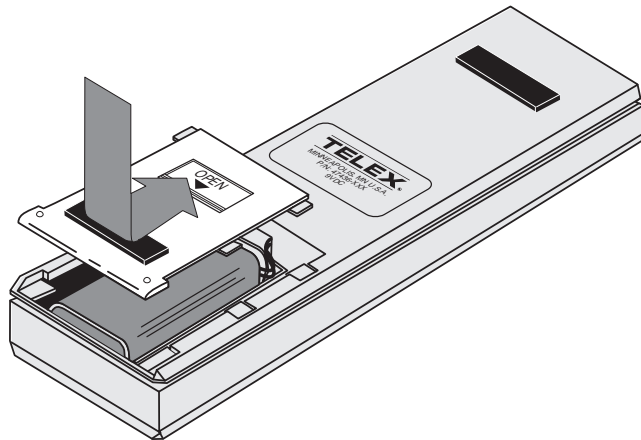
2. Connect the P170/P170v to the computer/s, audio source/s and an AC wall outlet as shown in Figure 5. (The P170v can also be connected to one or more VCRs or LaserDisc players.)

**Figure 5.**  
**P170/P170v**  
**Connections**



3. If you are going to use the remote control accessory, install the supplied battery as shown in Figure 6.

**Figure 6.**  
**Remote Control**  
**Battery**



4. Continue with the Operation section of this manual for instructions on the use of your MagnaByte® P170/P170v Color Computer Desktop LCD Projector.

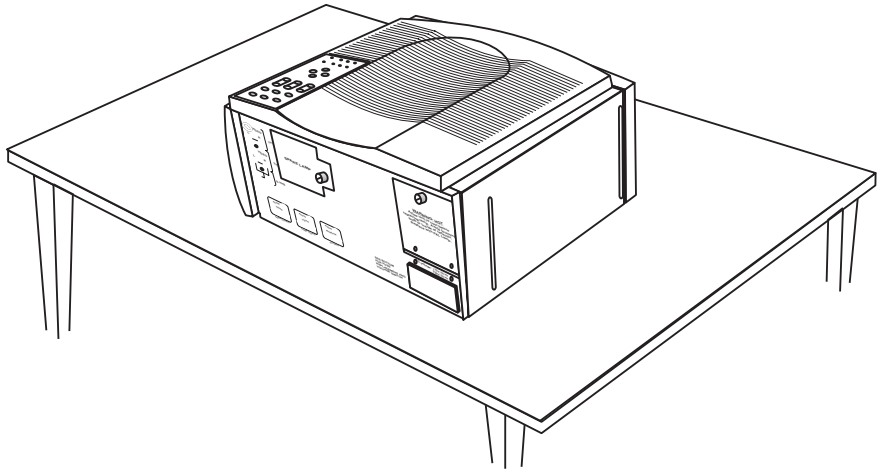
# P170/P170v SETUP

This section is a detailed description of the setup for your MagnaByte® P170/P170v. If you feel very comfortable with the set up of computer hardware, you may want to use the Quick Setup section of this manual.

## Positioning the P170/P170v On the Desktop

1. Place the MagnaByte® P170/P170v on a table or desktop as shown in Figure 7.

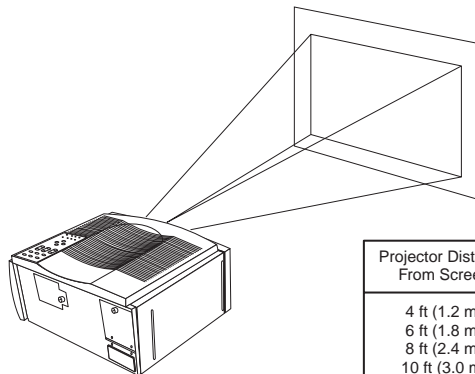
**Figure 7.**  
Positioning the  
P170/P170v on  
the Desktop



**NOTE:** Ensure that the P170/P170v vents are not blocked. The P170/P170v takes in cool air at the bottom of the projector. Hot air is exhausted at the top of the P170/P170v.

2. To determine the distance between projector and screen, refer to Figure 8 and select the desired screen image size.

**Figure 8.**  
Distance vs Image



Projector Distance From Screen	Image Height	Image Width
4 ft (1.2 m)	2.1 ft (0.6 m)	2.8 ft (0.9 m)
6 ft (1.8 m)	3.2 ft (1.0 m)	4.2 ft (1.3 m)
8 ft (2.4 m)	4.25 ft (1.3 m)	5.6 ft (1.7 m)
10 ft (3.0 m)	5.3 ft (1.6 m)	7.0 ft (2.1 m)

## Connecting the P170/P170v

The P170/P170v must be connected to some video source, and to an AC wall outlet. The P170/P170v can also be connected to a computer monitor, audio source/s, additional video source/s and to an external amplified stereo speaker system. (Only the P170v can be connected to a composite or S-VHS video source.)

The following steps describe the connections needed.

1. Turn off all equipment.
2. Plug the MagnaByte® P170/P170v into an AC wall outlet.
3. Audio input can be amplified by the P170/P170v and heard over the built-in speakers. Connect a stereo or mono audio source, such as the auxiliary output of an amplifier, a wireless microphone system, CD player, or tape player to the *COMPUTER 1 AUDIO* or *COMPUTER 2 AUDIO* jacks.



**NOTE:** The audio input must be connected with the appropriate video input. For example, if an external audio source is desired with *COMPUTER 1 VIDEO*, the audio source must be connected to *COMPUTER 1 AUDIO*.

4. If desired, connect an external amplified, mono or stereo speaker system to the *OUTPUT AUDIO* jack on the P170/P170v.



**NOTE:** When a cable is plugged into the *OUTPUT AUDIO* jack, the built-in speakers are disabled.

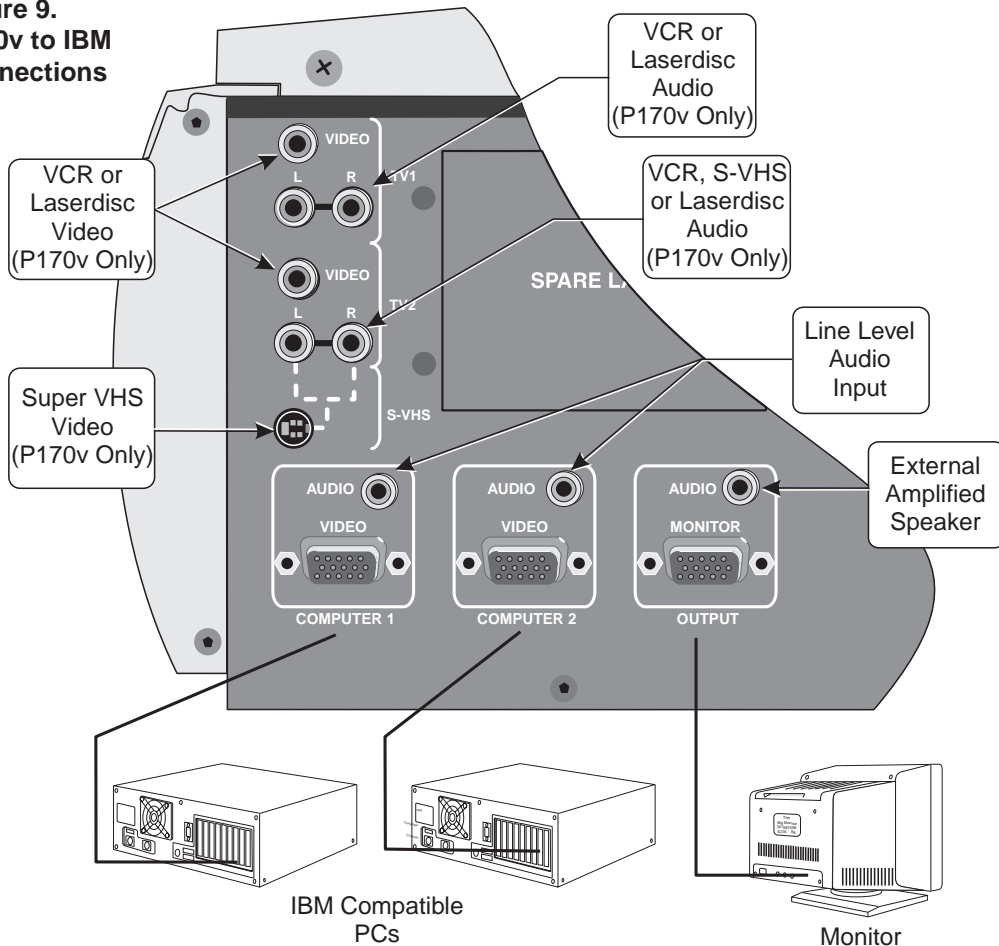
5. Only the P170v can be connected to composite or S-VHS video sources such as VCRs or LaserDisc players. If desired, use the composite video cable to connect the video source to the *TV1 VIDEO* or *TV2 VIDEO* jack on the P170v as shown in Figure 9. (If your video system has S-VHS capabilities, use the cable supplied with your video system to connect to the *S-VHS* jack on the P170v.)



**NOTE:** The *TV2* audio input (*L* and *R*) is used for both the *TV2 VIDEO* and *S-VHS* audio sources on the P170v only.

6. If you are using an IBM VGA computer, the connections are shown in Figure 9:
  - a. Unplug the monitor cable from the computer.
  - b. Plug one end of the supplied VGA cable into the video port of the computer.
  - c. Plug the other end of the VGA cable into the *COMPUTER 1 VIDEO* or *COMPUTER 2 VIDEO* jack on the MagnaByte® P170/P170v.
  - f. To use your computer monitor along with your P170/P170v, plug the monitor cable into the *OUTPUT MONITOR* jack on the MagnaByte® P170/P170v.

**Figure 9.**  
P170v to IBM  
Connections



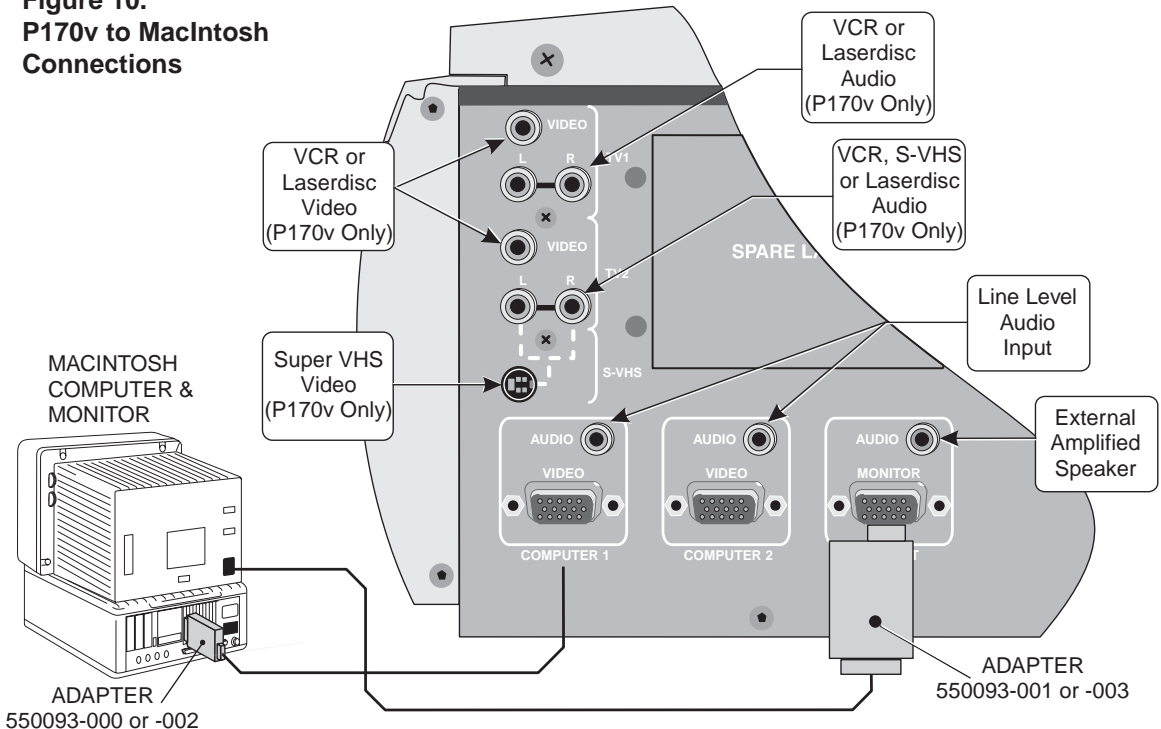
7. If you are using a Macintosh computer, the connections are shown in Figure 10:

- a. Unplug the monitor cable from the computer.
- b. Plug the adapter labeled either "550093-0" or "550093-2" into the monitor port of the computer.
- c. Plug one end of the supplied VGA cable into the adapter on the computer.
- d. Plug the other end of the VGA cable into the *COMPUTER 1 VIDEO* or *COMPUTER 2 VIDEO* jack on the MagnaByte® P170/P170v.
- e. To use your computer monitor along with your MagnaByte® P170/P170v, select the adapter labeled either "550093-1" or "550093-3." Plug the adapter into the *OUTPUT MONITOR* jack on the MagnaByte® P170/P170v; plug the computer monitor cable into the adapter.



**NOTE:** Simultaneous viewing is not possible with the 12-inch Macintosh monitor.

**Figure 10.**  
**P170v to Macintosh**  
**Connections**



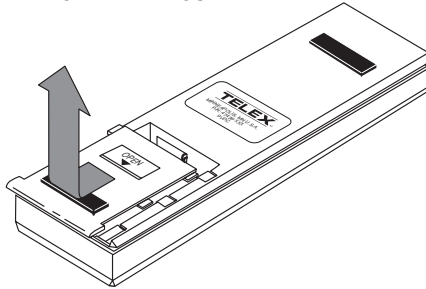


## Remote Control Battery

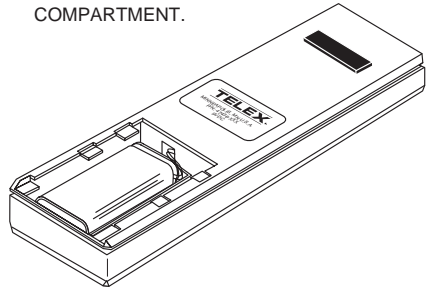
The optional remote control requires one 9V alkaline battery installed as shown in Figure 11.

**Figure 11.**  
**Remote Control**  
**Battery Installation**

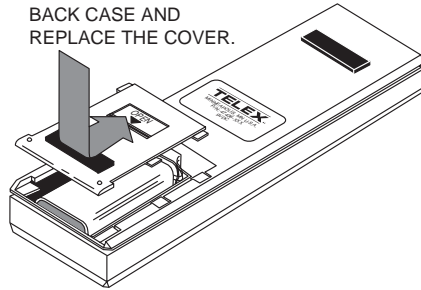
1. SLIDE THE BATTERY COVER BACK AND LIFT OUT.



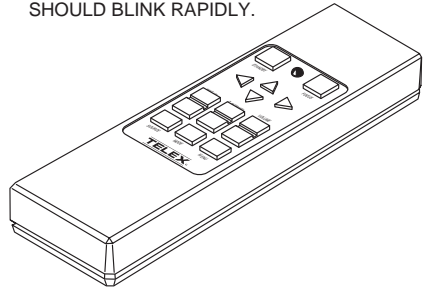
2. PLUG IN THE BATTERY AND POSITION IT IN THE BATTERY COMPARTMENT.



3. ALIGN THE TABS ON THE BATTERY COVER WITH THE SLOTS IN THE BACK CASE AND REPLACE THE COVER.



4. CHECK THE OPERATION BY PRESSING ANY KEY. THE LED INDICATOR SHOULD BLINK RAPIDLY.



A new battery should be installed in the remote control unit under the following circumstances:

- New remote control unit is received from the factory.
- LED on the remote control no longer lights when keys are pressed, indicating a “dead” battery
- Operating distance between the remote control and the P170/P170v becomes too short for your purposes, indicating a “weak” battery

Continue with the Operation section of this manual for instructions on the use of your MagnaByte® P170/P170v Color Computer Desktop LCD Projector.

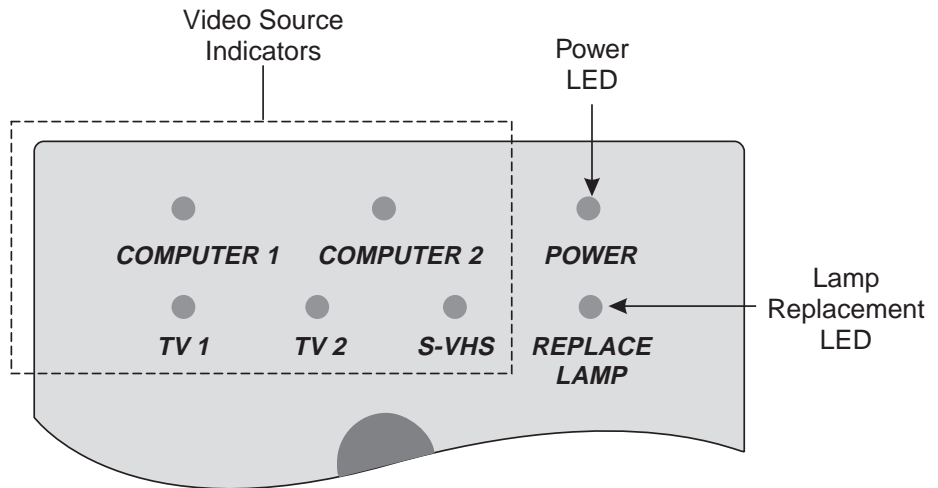
# OPERATION

After you have connected the MagnaByte® P170/P170v as described in either the Quick Setup or P170/P170v Setup sections of this manual, you are ready to begin using your color desktop LCD projector.

## Basic Operation

1. Slide open the lens cover door shown in Figure 13.

**Figure 12.**  
**MagnaByte®**  
**P170/P170v**  
**Indicators**



2. Turn on the P170/P170v desktop LCD projector. The POWER LED (Figure 12) should now be steady orange, and the video source indicators will be flashing to show that the MagnaByte® P170/P170v is being initialized. After initialization is complete, the video source indicators will then begin scanning to show that the P170/P170v is waiting for a video signal from one of the video inputs.

### WARNING

**WARNING!** To prevent burns when the P170/P170v is operating, avoid touching the lamp access door and the surrounding area of the rear panel.

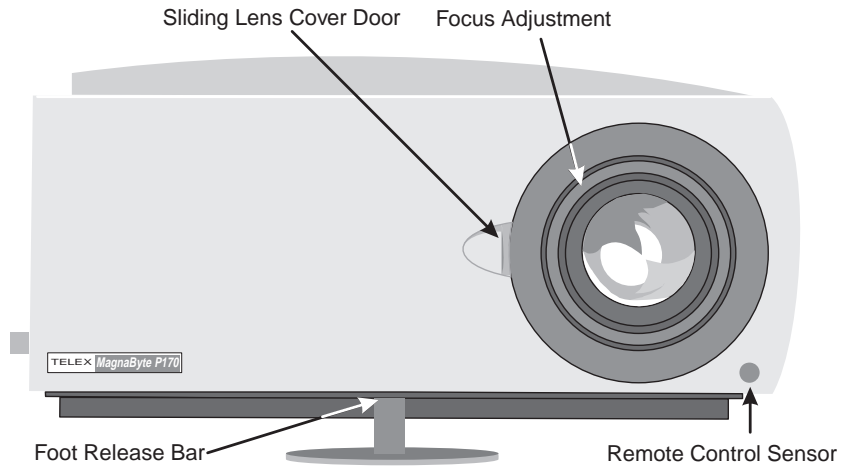
3. Turn on the attached computer/s. One of the source indicators will be steady green to show that the MagnaByte® P170/P170v has acquired a video signal from that video source.

!!

**CAUTION!** The cooling fan protects the MagnaByte® P170/P170v from heat generated by the projection lamp. Always make sure that the air intake and exhaust are not blocked.

4. Adjust the room lighting for optimum screen viewing. (The projector lamp is automatically turned on when the P170/P170v is turned on.) You may press the *LAMP* button to turn off the projector lamp until your presentation begins.
5. Adjust the screen focus by rotating the lens (Figure 13).

**Figure 13.**  
**Height and Focus**  
**Adjustments**



6. To adjust the vertical position of the image on the viewing screen:
  - a. Lift the front of the projector.
  - b. Press the foot release bar shown in Figure 13.
  - c. Raise or lower the projector as desired, then release the bar.



**NOTE:** The keypanel and on-screen control settings will be the same as they were when the P170/P170v was last used, if five seconds were allowed to elapse before the P170/P170v was turned off.

7. To improve the image phase adjustment, display a colorful image on the computer screen and select the on-screen **FOCUS** control. (It is easier to adjust the MagnaByte® P170/P170v with a colorful image.)
8. Turn on your audio source (CD player, wireless microphone, amplifier auxiliary audio output, etc.).
9. Press *VOLUME* to adjust the volume of the P170/P170v built-in speakers.



**NOTE:** If you have an external powered speaker system plugged into the *OUTPUT AUDIO* jack, turn it on and adjust the volume of that external system. (The level at the *OUTPUT AUDIO* jack is controlled by *VOLUME*.)

10. Turn on and play the connected VCR, LaserDisc player, etc. (P170v model only.)
11. Press *SOURCE* on the P170/P170v keypanel to select one of the computer inputs, as indicated by the *SOURCE* LEDs shown in Figure 12. (Only the P170v can also select from two composite video and one S-VHS source.)
12. To further enhance or change the image on the MagnaByte® P170/P170v, refer to the Keypanel and Menu Mode On-Screen Control sections of this manual.



**NOTE:** Five seconds after you make a change, the image enhancements that you have made will be saved. These saved enhancements will be used as the default settings the next time that you activate your P170/P170v.

13. When you are not projecting an image, press *LAMP* to turn off the projection lamp.
14. After the MagnaByte® P170/P170v has cooled, turn it off.



**NOTE:** To use your computer and monitor without disconnecting them from the P170/P170v, the P170/P170v must be plugged into an AC wall outlet and turned on. The *OUTPUT MONITOR* jack on the MagnaByte® P170/P170v requires power to operate the computer monitor.



**NOTE:** The projector lamp does **not** need to be on to use the *OUTPUT MONITOR* jack.

# CONTROLS

The P170/P170v keypanel and Menu Mode On-Screen controls allow you to customize the projected image and enhance the appearance of your presentation. The function of each keypanel and on-screen control is described below and the keypad is shown in Figure 14.



**NOTE:** When any keypad key is pressed, the active source indicator LED will turn off while the key is pressed.

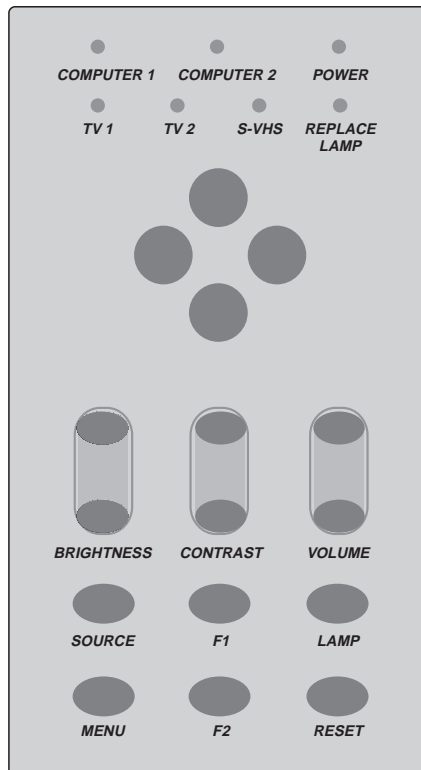
## Keypanel Controls

### *MENU*

This key controls the display of on-screen “menu” and graphic information. If an on-screen “menu” or graphic item is displayed, pressing this key will make the display disappear (on-screen displays normally disappear after five seconds). To enter “menu” mode and access the on-screen “menu” functions, press and release *MENU*, then press either the up or

down arrow key to “step” through the “menu” until the desired Menu Mode On-Screen Control is displayed. When the P170/P170v is in on-screen “menu” mode, only the Menu Mode On-Screen Controls are functional.

**Figure 14.**  
**MagnaByte®**  
**P170/P170v**  
**Keypad**



**NOTE:** All controls have on-screen graphics to indicate their relative value or selection setting.

*RESET* To reset the MagnaByte® P170/P170v image to the original factory settings, press and hold *RESET* until the on-screen display indicates READY TO RESET (approximately five seconds). When the key is released the P170/P170v will reset, clearing all image enhancements that you have made, restoring the factory settings as the default settings. (If *RESET* is released before READY TO RESET is displayed, the factory settings will not be restored.)

*SOURCE* Press *SOURCE* to select video and audio input from *COMPUTER 1*, *COMPUTER 2*, *TV 1*, *TV 2*, *S-VHS* jacks. If only one video source is “live,” the screen will go blank for a moment, then return control to the “live” video source. (If your desktop LCD projector is not a P170v, *COMPUTER 1*, and *COMPUTER 2* will be the only video sources available.)

*LAMP* Press *LAMP* to turn off the projector lamp. Press *LAMP* again to turn on the projector lamp. (The lamp is on when the P170/P170v is turned on.)

Alignment Press ◀, ▶, ▲, or ▼, to move the image left, right, up, or down. When the adjustment limit is reached, the LED will flash slowly.



**NOTE:** The Alignment controls are functional only when the P170/P170v is not in “menu” mode.

*BRIGHTNESS* Press the upper button of the *BRIGHTNESS* control to increase the overall image brightness. Press the lower button of the *BRIGHTNESS* control to decrease the overall image brightness. When either adjustment limit is reached, the LED will flash slowly.

*CONTRAST* Press the upper button of the *CONTRAST* control to make the color image more vivid. Press the lower button of the *CONTRAST* control to provide greater definition to the color image in the subtle shading areas. When either adjustment limit is reached, the LED will flash slowly.

*VOLUME* Press the upper button of the *VOLUME* control to increase the volume of the built-in speakers, or increase the level at the *OUTPUT AUDIO* jack. Press the lower button of the *VOLUME* control to decrease the volume of the built-in speakers, or decrease the level at the *OUTPUT AUDIO* jack. When either adjustment limit is reached, the currently active LED will flash slowly.

*F1* The *F1* key can be programmed as a shortcut to any Menu Mode On-Screen control that you feel you regularly need to use without going through the on-screen “menu” to access. To begin programming the *F1* key, first access the desired Menu Mode On-Screen Control, then press *F1* and the F1 on-screen graphic will appear. Press *F1* a second time to

program the key for the selected Menu Mode On-Screen Control. The *F1* key will now access the selected Menu Mode On-Screen Control. If you **do not** press *F1* a second time within five seconds, the *F1* program will remain unchanged. (The *F1* key is not available on the remote control.)

*F2* The *F2* key can be programmed as a shortcut to any Menu Mode On-Screen control that you feel you regularly need to use without going through the on-screen “menu” to access. To begin programming the *F2* key, first access the desired Menu Mode On-Screen Control, then press *F2* and the *F2* on-screen graphic will appear. Press *F2* a second time to program the key for the selected Menu Mode On-Screen Control. The *F2* key will now access the selected Menu Mode On-Screen Control. If you **do not** press *F2* a second time within five seconds, the *F2* program will remain unchanged.

## Menu Mode On-Screen Controls

***INVERSE*** To access the ***INVERSE*** function, press and release *MENU*, then press either the up or down arrow key to “step” through the “menu” until ***INVERSE*** is displayed. Press either the right or left arrow key to switch between a positive and negative image. An on-screen graphic will indicate the ***INVERSE*** setting.

***MODE*** Macintosh users: The ***MODE*** function is ignored.

IBM VGA users: To access the ***MODE*** function, press and release *MENU*, then press either the up or down arrow key to “step” through the “menu” until ***MODE*** is displayed. When displaying text, press either the right or left arrow key to select between two different text resolutions. An on-screen graphic will indicate the ***MODE*** setting.

***PIX DROP*** Macintosh users: The ***PIX DROP*** function is ignored.

IBM VGA users: To access the ***PIX DROP*** function, press and release *MENU*, then press either the up or down arrow key to “step” through the “menu” until ***PIX DROP*** is displayed. When displaying text, press either the right or left arrow key to select between nine different text display styles. An on-screen graphic will indicate the ***PIX DROP*** setting.

(The ***PIX DROP*** function is only active during one of the text resolution modes described above.)

***STANDBY*** To access the ***STANDBY*** function, press and release *MENU*, then press either the up or down arrow key to “step” through the “menu” until ***STANDBY*** is displayed. Press either the right or left arrow key to place the P170/P170v screen in standby. After a few seconds, an on-screen graphic will indicate the ***STANDBY*** setting.

Press any key to restore the P170/P170v screen and all keypad functions.

### **FOCUS**

To access **FOCUS** function, press and release *MENU*, then press either the up or down arrow key to “step” through the “menu” until **FOCUS** is displayed. Press either the right or left arrow key to select between six possible image phase adjustment settings. An on-screen graphic will indicate the **FOCUS** setting. **FOCUS** can be affected by the **WIDTH** control, refer to the Troubleshooting Guide.

### **TINT**

To access the **TINT** function, press and release *MENU*, then press either the up or down arrow key to “step” through the “menu” until **TINT** is displayed. Press the right arrow key to increase the red in the color image. Press the left arrow key to increase the green in the color image. An on-screen graphic will indicate the relative value of the **TINT** setting.

### **TONE**

To access the **TONE** function, press and release *MENU*, then press either the up or down arrow key to “step” through the “menu” until **TONE** is displayed. Press the right arrow key to increase the high tones in the speaker output. Press the left arrow key to decrease the high tones in the speaker output. An on-screen graphic will indicate the relative value of the **TONE** setting.

### **MIRROR**

To access the **MIRROR** function, press and release *MENU*, then press either the up or down arrow key to “step” through the “menu” until **MIRROR** is displayed. Press either the right or left arrow key to switch between the standard or mirror (reverse) image. An on-screen graphic will indicate the **MIRROR** setting.

### **WIDTH**

To access the **WIDTH** function, press and release *MENU*, then press either the up or down arrow key to “step” through the “menu” until **WIDTH** is displayed. Press the right arrow key to expand the width of the image. Press the left arrow key to contract the width of the image. An on-screen graphic will indicate the relative value of the **WIDTH** setting. **WIDTH** may affect the **FOCUS** control, refer to the Troubleshooting Guide.

### **PALETTE**

To access the **PALETTE** function, press and release *MENU*, then press either the up or down arrow key to “step” through the “menu” until **PALETTE** is displayed. Press either the right or left arrow key to switch between one of two color modes: 8-color or 16,194,277-color. An on-screen graphic will indicate the **PALETTE** setting.

### **LAMP HOURS**

To access the **LAMP HOURS** function, press and release *MENU*, then press either the up or down arrow key to “step” through the “menu” until **LAMP HOURS** is displayed. An on-screen graphic will indicate the current **LAMP HOURS** value. The **LAMP HOURS** value is based upon an expected average lamp life of 40 hours. As the P170/P170v is used, the lamp hour value is decremented from 40 toward 0. When the lamp



hour value reaches 0, the *REPLACE LAMP* LED will light. Press either the right or left arrow key to reset the **LAMP HOURS** value to 40, and extinguish the *REPLACE LAMP* LED.

**Language** To access the language function, press and release *MENU*, then press either the up or down arrow key to “step” through the “menu” until **ENGLISH, FRENCH, GERMAN** or **SPANISH** is displayed. Press either the right or left arrow key to “step” through the four languages. The language selected will be displayed on-screen.

**TV COLOR** To access the **TV COLOR** function, press and release *MENU*, then press either the up or down arrow key to “step” through the “menu” until **TV COLOR** is displayed. Press the right arrow key to increase the amount of color in the image. Press the left arrow key to decrease the amount of color in the image. An on-screen graphic will indicate the relative value of the **TV COLOR** setting. This control can only be adjusted when viewing a TV video image (P170v only).

## LED Indicators

**COMPUTER 1** When lit, the *COMPUTER 1* LED indicates that a video source is present at the *COMPUTER 1* connection and it has been selected, using the *SOURCE* control.

**COMPUTER 2** When lit, the *COMPUTER 2* LED indicates that a video source is present at the *COMPUTER 2* connection and it has been selected, using the *SOURCE* control.

**POWER** When lit, the *POWER* LED indicates that the P170/P170v is plugged into an AC wall outlet and turned on.

**TV 1** When lit, the *TV 1* LED indicates that a video source is present at the *TV 1* connection and it has been selected, using the *SOURCE* control.

**TV 2** When lit, the *TV 2* LED indicates that a video source is present at the *TV 2* connection and it has been selected, using the *SOURCE* control.

**S-VHS** When lit, the *S-VHS* LED indicates that a video source is present at the *S-VHS* connection and it has been selected, using the *SOURCE* control.

**REPLACE LAMP** When lit, the *REPLACE LAMP* LED indicates that the **LAMP HOURS** value is zero. Refer to the **LAMP HOURS** Menu Mode On-Screen control and the Lamp Replacement section of this manual.

## Remote Control

The optional RC-7 can be used to remotely change all of the keypad and on-screen control functions, with the exception of the *F1* key. When a remote control button is pressed, the LED on the remote control blinks rapidly.



**NOTE:** When the remote control operating distance becomes too short for your purposes, install a fresh battery as described in the Remote Control Battery section of this manual.

## CARE AND MAINTENANCE

### Storage and Transportation

Store and transport the MagnaByte® P170/P170v at temperatures between 0° and 140°F (-17° to 60°C). Avoid storage in automobiles during seasonal temperature extremes. Automobile interior temperatures can exceed 160°F (70°C) in summer and drop below -20°F (-29°C) in winter. If the MagnaByte® P170/P170v has been exposed to extremely hot, cold or humid conditions, allow it to stand at room temperature for 30 minutes before use. Take care to protect the MagnaByte® P170/P170v from jarring impacts.

### Lens Cleaning

1. Slide open the lens cover door shown in Figure 13.
2. Gently wipe the exposed lens surfaces with a clean, lint-free tissue (slightly moistened with lens cleaner if necessary). **Never** pour lens cleaner or other solvents on the lens elements.



**CAUTION!** Never use silicone-impregnated eyeglass tissues on the coated projection lens.

### Lamp Replacement

**WARNING!** To prevent burns, allow the lamp access door and projection lamp to cool before attempting to replace the lamp.

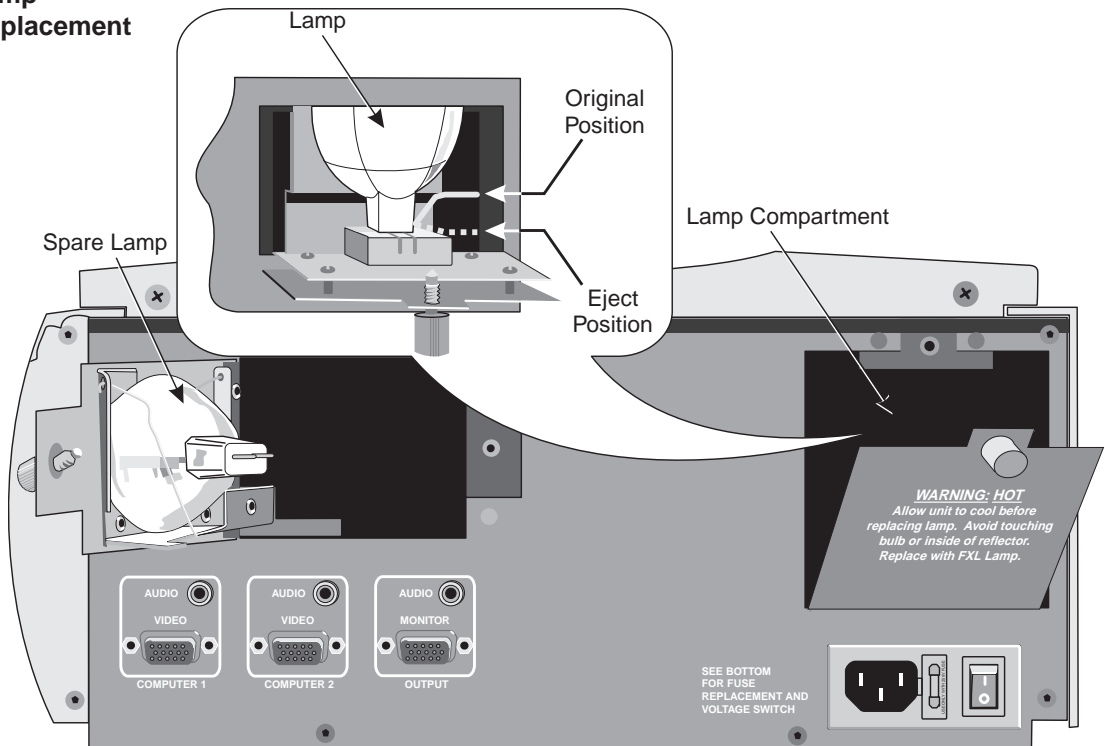
**WARNING**

1. Allow the P170/P170v to cool.
2. Unplug the power cord.
3. Unscrew and open the lamp access door (Figure 15).

4. Eject the lamp by pulling the ejection lever (Figure 15) on the lamp holder toward the rear of the P170/P170v.
5. Return the ejection lever to its original, vertical position.

**NOTE:** Typically, lamps have an operating life of approximately 40 hours. When lit, the *REPLACE LAMP* LED indicates that the P170/P170v has been in use for approximately 40 hours and lamp failure may occur soon. At this time you may elect to replace the lamp or reset the **LAMP HOURS** using the Menu Mode On-Screen control, or you may elect to continue using your P170/P170v until the lamp fails.

**Figure 15.**  
**Lamp**  
**Replacement**



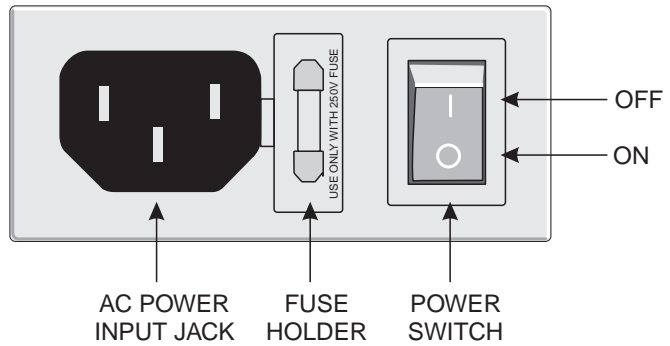
6. Unscrew and open the spare lamp access door (Figure 15).
7. Remove the spare lamp from its storage location and insert it into the lamp holder.



**NOTE:** Replace the spare lamp as soon as possible.

8. Close both the lamp access and spare lamp access doors (Figure 15).

**Figure 16.  
Fuseholder  
Location**



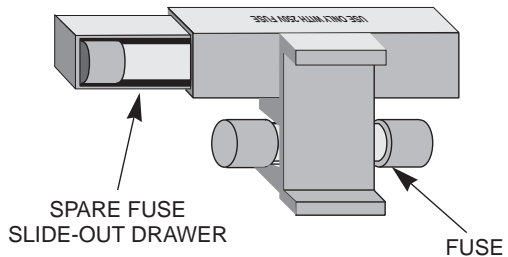
## Fuse Replacement

Figure 16 shows the location of the fuse/spare fuse holder. Use a small flat-blade screwdriver to pop the fuse/spare fuse holder out.

A spare fuse may be stored in the slide-out drawer, as shown in Figure 17.

Replace the fuse only with the type and rating shown on the label. If the module repeatedly blows fuses, return it for servicing.

**Figure 17.  
Spare Fuse/Fuse  
Holder**



## Troubleshooting Guide

### PROBLEM

### POSSIBLE SOLUTIONS

Telex logo is displayed on MagnaByte® P170/P170v

- Unit is working properly, but no video source is present.

No image projected from MagnaByte® P170/P170v

- MagnaByte® not turned on.
- MagnaByte® not connected to AC wall outlet.
- AC wall outlet defective.
- Computer video cable not secure.
- No video signal from computer.
- Incompatible video signal from computer.
- Projector lamp burned out.

No image on monitor

- Computer or monitor video cable not secure.
- Monitor power off or disconnected.
- MagnaByte® not connected to AC wall outlet.
- MagnaByte® not turned on.
- No video signal from computer.

Poor color or no color

- Adjust bright, tint, and contrast controls.
- Wrong inverse mode; change **INVERSE** setting.
- Signal from computer is monochrome.
- Computer video cable not secure.
- Select a different color mode using the **PALETTE** function.
- Adjust room lighting.

Flickering or unstable image

- Focus needed; use the **FOCUS** control (there are six possible settings).
- Computer video cable not secure.
- Incompatible video signal from computer.
- Adjust the **WIDTH** control.

Split image or partial image

- Image alignment needed; use up-down and left-right arrow keys.
- Incompatible video signal from computer.

PROBLEM                      POSSIBLE SOLUTIONS

Power Indicator not illuminated on keypad

- MagnaByte® not turned on.
- MagnaByte® not connected to AC wall outlet.
- Defective AC wall outlet.

Source indicators scanning on keypad

- No video signal from computer.
- Incompatible video signal from computer.
- Computer video cable not secure.

No audio from built-in speakers

- MagnaByte® not turned on.
- MagnaByte® not connected to AC wall outlet..
- AC wall outlet defective.
- Audio source turned off.
- Audio source not connected with appropriate video input.
- Audio source and audio output cables are reversed.
- Volume control is set too low.
- External amplified speaker system connected to the *OUTPUT AUDIO* jack.

Visible bright spots

- An inactive pixel may appear as a bright spot on the screen, however, it will not affect picture quality or the life expectancy of the P170/P170v. (The MagnaByte® P170/P170v may contain a maximum of 50 inactive pixels.)

Image contains one or more vertical bars

- Use the Menu Mode On-Screen Controls to adjust the **WIDTH**. (After eliminating the vertical bars, use **FOCUS** to sharpen the image.)



**NOTE:** When adjusting the **WIDTH**, if the left arrow adjustment causes the number of bars to increase, use the right arrow adjustment to eliminate the bars. If the left arrow adjustment causes the number of bars to increase, use the right arrow adjustment to eliminate the bars.

## PROBLEM

## POSSIBLE SOLUTIONS

### Image out of focus

- Rotate the lens to adjust screen focus.
- Adjust **FOCUS** control.



**NOTE:** If only portions of the image are out of focus and the **FOCUS** adjustment causes the out-of-focus portions to move, refer to the solution described in the “vertical bars” problem.



**NOTE:** Displaying a cross-hatch pattern will aid in resolving any focus adjustment problems.

### No image on Macintosh monitor

- Incorrect Macintosh computer and monitor adapters.  
(Use the 55093-002 and 550093-003 adapters with Macintosh multi-scan monitors. Use the 55093-000 and 550093-001 with non-multi scan Macintosh monitors.)

### Undefined or unresolved problem

- Before calling for technical assistance use the RESET control to restore the factory settings, then use the Keypanel and Menu Mode On-Screen Controls to make your image enhancements.

## SERVICE INFORMATION

In the interest of promptness (if service is required), it is recommended that you first contact the dealer from whom the equipment was purchased. If modules are to be returned to the dealer or factory, they should be shipped in the original packing material or carefully packed in some other container with sufficient packing material to prevent damage. Technical assistance is available from the Telex Customer Service Department at the following address:

Customer Service Department  
Telex Communications, Inc  
9600 Aldrich Avenue South  
Minneapolis, Minnesota 55420 USA  
Telephone: (612) 884-4051  
(Collect calls not accepted)

Return equipment for factory repair to:

Service Department  
Telex Communications, Inc.  
1720 East 14th Street  
Glencoe, MN 55336 USA



**NOTE:** All equipment returned for repair must be accompanied by documentation stating your return address, telephone number and proof of date of purchase, along with a description of the problem. In lieu of this, you may obtain a Return Authorization Form from our Customer Service Department.



# TECHNICAL SPECIFICATIONS

## Computer Compatibility

- IBM and IBM compatibles with VGA (640 x 480)
- Macintosh computers with external video (640 x 480 mode)

## Computer Interface

HD-15 D-subminiature interface connector

## Color Palette

- 8-color mode: 2 shades per color, 8 total colors
- 16M-color mode: 253 shades per color, 16,194,277 total colors

## LCD Panel

- 6.4" (diagonal measure)
- Active matrix TFT
- Contrast ratio
  - 60:1 minimum
  - 100:1 typical
- 640 x 480 pixel resolution
- Pixel response time
  - $t_r = 30$  msec typical
  - $t_f = 50$  msec typical

## Optical Lens

- 190 mm focal length
- f3.8
- Four element split flint lens

## Computer Video Requirements

- Red, Green, Blue signal input/output  
(0 to 1.0V at 75 ohms impedance)
- Vertical sync frequency: 60 - 70 Hz
- Horizontal sync frequency: 30 - 32 kHz

### **Composite Video Requirements (P170v only)**

NTSC, PAL or SECAM composite video

### **S-VHS Video Requirements (P170v only)**

NTSC, PAL or SECAM video with separate chrominance and luminance

### **Projection Lamp Requirements**

410 Watt FXL lamp

### **Input Power**

450 Watts at 120 VAC

### **Weight**

12.3 lbs (5.6 kg)

### **Dimensions**

6.75" (H) x 12" (L) x 15" (W)  
(171 mm x 305 mm x 381 mm)

### **Environmental Requirements**

- Storage temperature: 0° to 140°F (-17° to 60°C)
- Operating temperature: 32° to 95°F (0° to 35°C)
- Relative humidity: 95% (non-condensing) at 104°F (40°C)

# ABBREVIATIONS

AUX	Auxiliary
B/W	Black and white
CCIR	Comite Consultatif International des Radio Communications
CD	Compact disk
CW	Clockwise
CCW	Counter-clockwise
DOS	Disk operating system
EP	Extended play (same as SLP)
FCC	Federal Communications Commission
LCD	Liquid crystal display
LED	Light emitting diode
LP	Long play
ME-SECAM	Middle East SECAM
NTSC	National Television System Committee
PAL	Phase alternation by line
RAM	Random access memory
ROM	Read only memory
SECAM	Sequentiel Couleur A Memoire
SLP	Super long play (same as EP)
SP	Standard play
S-VHS	super VHS
TFT	Thin film transistor
VAC	Volts-alternating current
VCR	Video cassette recorder
VDC	Volts-direct current
VGA	Video graphics adapter
VHS	Video home system

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